

Work Order ID 65002

Wednesday, January 05, 2011 1:25:34 PM



Page 1

Item ID: D3220-042

Accept



Setup Start



Revision ID:

Item Name: Doubler Assembly

Stop



Start Date: 1/5/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 1/14/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals: Process Plan:



Date: 1/5/2011 Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr	Revision Nbr
D3220	B

100



FLOW WATER JET

Waterjet

Memo

0.00

B11-1-6

FLOW CNC Waterjet

2024.050

1-Cut D3220-2 as per Dwg D3220

Dwg Rev: B

Prog Rev: B

2-Deburr if necessary

(6)

110



QC2- Inspect parts off machine FAI/FAIB

0.00

QC

Memo

0.00

B11-1-6

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65002

Wednesday, January 05, 2011 1:25:34 PM



Page 2

Item ID: D3220-042

Accept



Setup Start



Revision ID:

Item Name: Doubler Assembly

Stop



Start Date: 1/5/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 1/14/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Sulaloo6

(X6)

Quality Control

130

Small Fab

0.00

Small Fab

Memo

0.00

Small Fab

1-Deburr

2-C'sink D3220-2 as per Dwg D3220

140

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Sulaloo110

(X6)

Quality Control

-042

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65002

Wednesday, January 05, 2011 1:25:34 PM



Page 3

Item ID: D3220-042

Accept



Setup Start



Revision ID:

Item Name: Doubler Assembly

Stop



Start Date: 1/5/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 1/14/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals:

Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150



Chemical Conversion Coat per QSI005 4.1

0.00

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

HandFinish

Memo

0.00

Hand Finishing

160



QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

X6 0

6 BL 11-01-11

170



Small Fab

0.00

Small Fab

Memo

0.00

Small Fab

Assemble D3220-042 doubler as per Dwg D3220

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 65002

Wednesday, January 05, 2011 1:25:34 PM



Page 4

Item ID: D3220-042

Accept



Setup Start



Revision ID:

Item Name: Doubler Assembly

Stop



Start Date: 1/5/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 1/14/2011 Req'd Qty: 4.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

1/5/19

(6)

-001

190



Packaging

Packaging

Identify as per dwg & Stock Location: 177

0.00

1/5/19

1/5/19 (6)

200



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

1/5/19

1/5/19 (6)
MF
11-01-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, January 05, 2011 1:25:38 PM

Page 1

Work Order ID: 65002



Parent Item: D3220-042



Parent Item Name: Doubler Assembly

Start Date: 1/5/2011

Required Date: 1/14/2011

Comments: IPP Rev:A New Issue 05-11-06 JLM
IPP: B 06.11.15 wateriet EC

Start Qty: 4.00

Required Qty: 4.00

MS21059L4

Nutplate

Loc Ott

Loc Code

114718

2

Loc Code

24x

4116582

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	65002
Description: Doubler	Part Number:	D3220-2
Inspection Dwg: D3220	Rev: A1	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Measured by:	<u>B</u>	Audited by:	<u>J</u>	Prototype Approval:	N/A
Date:	11-1-06	Date:	11/01/06	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.09.06	New Issue P/O D3220-042	KJ/JLM	E

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8

7

6

5

4

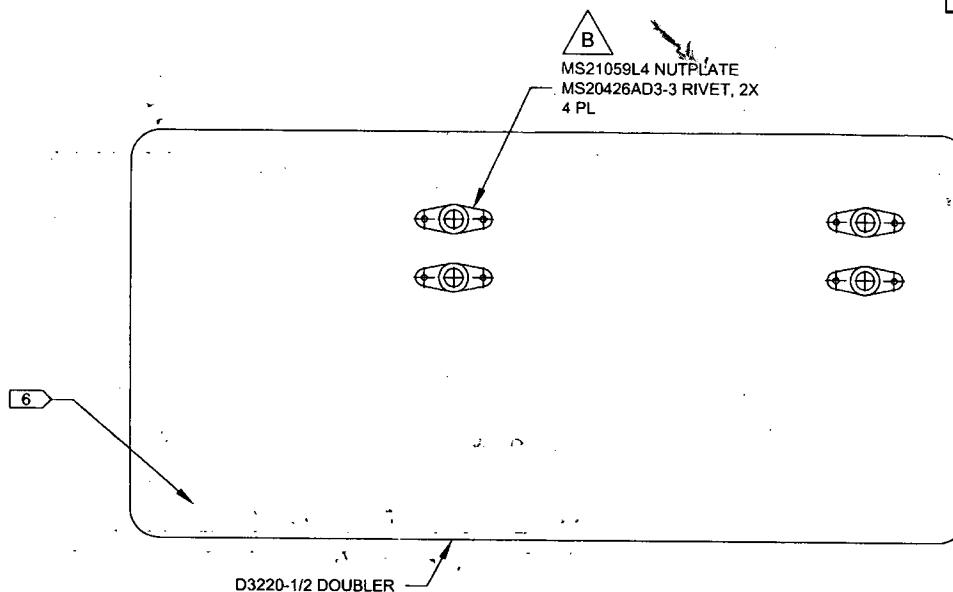
3

2

1

D

D



Item	Qty -041	Qty -042	Part Number	Description
1	X		D3220-041	DOUBLER ASSEMBLY
2		X	D3220-042	DOUBLER ASSEMBLY
3	1		D3220-1	DOUBLER
4		1	D3220-2	DOUBLER
5	4	4	MS21059L4	NUTPLATE
6	8	8	MS20426AD3-3	RIVET

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 65002

PL 11-01-5

RELEASED
2009-09-09
M

D3220-041 DOUBLER ASSEMBLY (SHOWN WITH D3220-1 DOUBLER)
D3220-042 (OPPOSITE)

NOTES:
1) MATERIAL: N/A
2) FINISH: N/A

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-04X" USING FINE POINT PERMANENT INK MARKER
7) WEIGHT: D3220-041 = 0.53 lbs
D3220-042 = 0.53 lbs

B	DRAWING UPDATED TO CURRENT STANDARDS. \varnothing .316 WAS \varnothing .323 (ZN C8-2, B4-3); MS20426AD3-3 WAS MS20426AD3-4 (ZN D4-1); CORRECT TYPO NOTE 1 (ZN A8-2, A8-3); REF PAR 09-025		RF	09.07.08
A	NEW ISSUE		CP	03.10.16
REV.	DESCRIPTION		BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	RF			
CHECKED		DRAWING NO.	REV. B	
MFG. APPR.		D3220	SHEET 1 OF 4	
APPROVED		TITLE	SCALE	
DE APPR.		DOUBLER	NTS	
DATE	09.07.08	COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		

8

7

6

5

4

3

2

1

A

A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

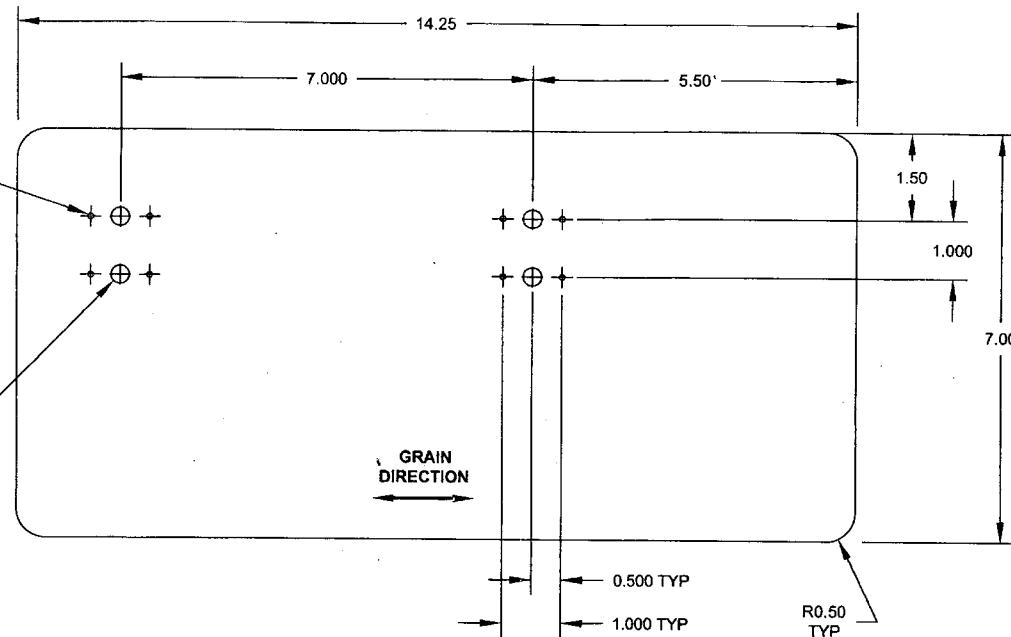
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

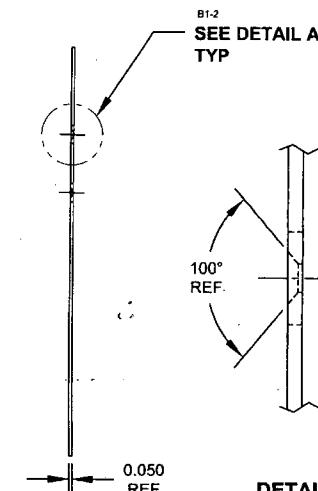
NOTE: Date & initial all entries

8 1 7 1 6 1 5 1 4 1 3 1 2 1 1

D

Ø0.098
CSK Ø0.180x100°
NEAR SIDE, 8 PLB
Ø0.316
TYP, 4 PL

W0 45002

D3220-1 DOUBLER**DETAIL A** D2-2
SCALE 5X

B

D

C

C

B

B

A

A

B NOTES:

- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK
REF DART SPEC. M2024T3S.050
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-1" USING REMOVABLE TAG
- 7) WEIGHT: 0.50 lbs

8 1 7 1 6 1 5 1 4 1 3 1 2 1 1

DESIGN	DS	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>CP</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>ND</i>	D3220	SHEET 2 OF 4
APPROVED	<i>ND</i>	TITLE	SCALE
DE APPR.	<i>ND</i>	DOUBLER	NTS
DATE	09.07.08	COPRIGHT © 2003 BY DART AEROSPACE LTD	

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.

RELEASED
2009-09-09
MP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

D

D

7.00

1.000

1.50

14.25

5.50

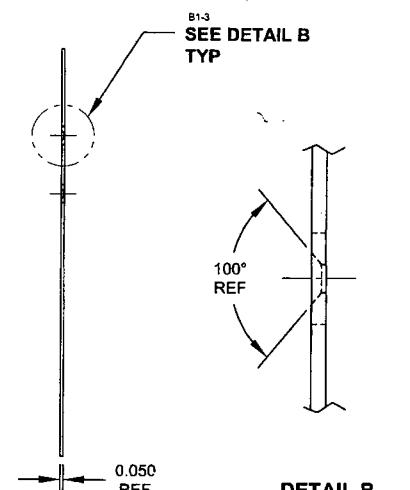
7.000

0.500 TYP

1.000 TYP

Ø0.098
CSK Ø0.180x100°
NEAR SIDE, 8 PLR0.50
TYPGRAIN
DIRECTION

B

D3220-2 DOUBLER

B

B

A

A

NOTES:

- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK
REF DART SPEC. M2024T3S.050
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-2" USING REMOVABLE TAG
- 7) WEIGHT: 0.50 lbs

8 7 6 5 4 3 2 1

DESIGN	DS	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
		D3220	SHEET 3 OF 4
MFG. APPR.			
APPROVED		TITLE	SCALE
		DOUBLER	NTS
DE APPR.			
DATE	09.07.08		

COPYRIGHT © 2003 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY OTHER PURPOSE, NOR IS IT TO BE COPIED OR DISCLOSED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.

3

2

1

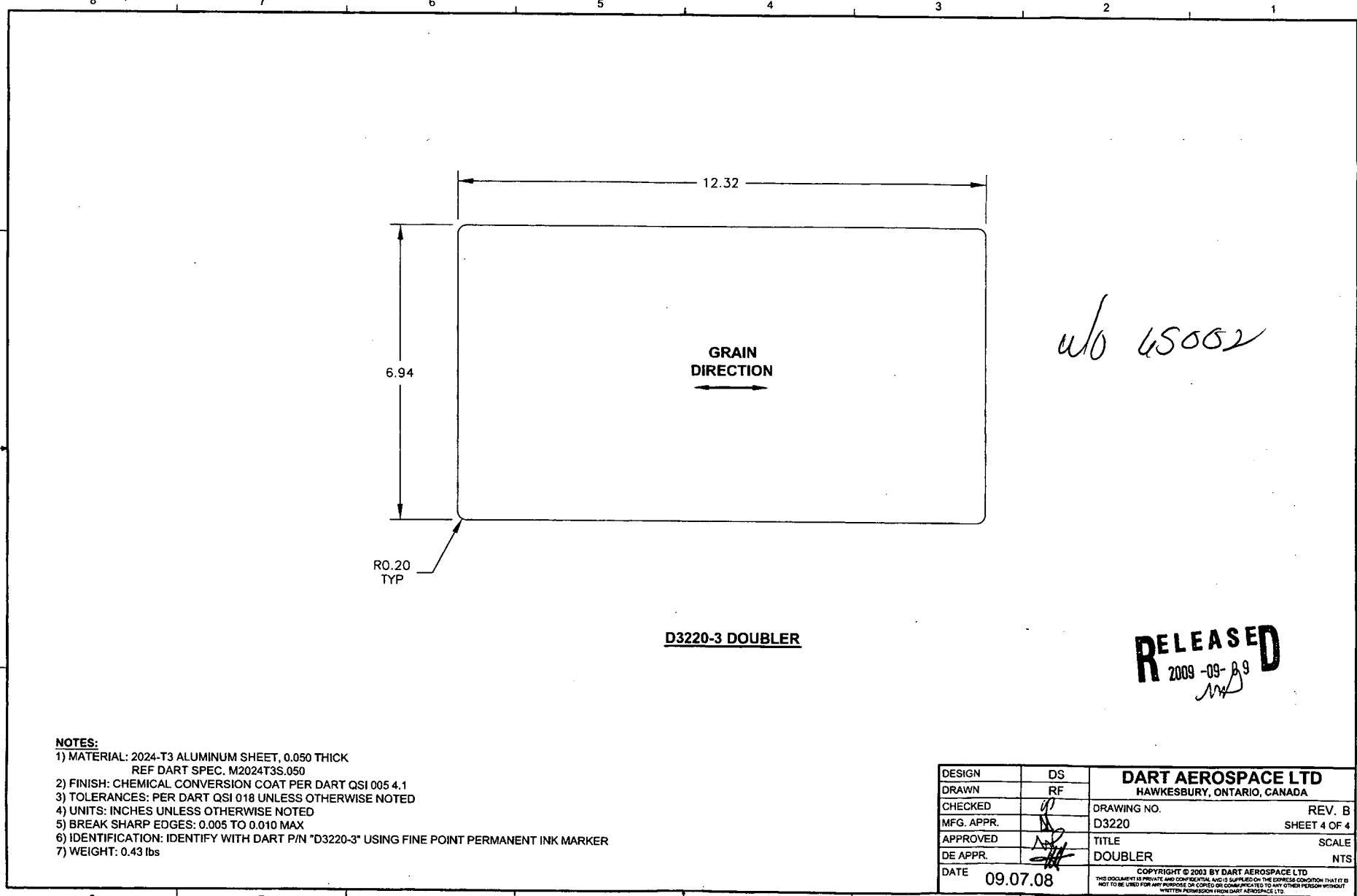
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries